

# Teacher Education Committee

November 26, 2013

Agenda

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1. Call to Order
  2. Approval of TEC meeting minutes from October 22
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## College of Arts and Sciences

### Department of Geography & Geology

Course Revision	GLY102	Fall 2014
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### Department of Physics & Astronomy

Course Dropped	AST330	Fall 2014
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New Course	AST335	Fall 2014
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Program Revision	Bachelor of Science (B.S.) Physics/Teaching	Fall 2014
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### Discussion / Informational Items

Good of the Order

# Teacher Education Committee

October 22, 2013

## Minutes

Members Present: Kim Naugle, Margaret Moore, John Ferguson, Paul Erickson, Deborah Haydon, Dorie Combs, Larry Sexton, Laurence Hayes, James Dantic, Gary Steinbach, Faye Deters, Sonia Michael, Stephen Willis, Charlie Hughes, Laurie Larkin, Ken Engebretsen, Ginni Fair, Jennifer Christensen

Members Absent: Verna Lowe\*, James Bliss, Robert Biggin, Rose Perrine\*, Gene Kleppinger, Sandra Stevens, Carol Sommer\*, Mark Cornette, Scott Townsend, Jackie Jay, Rose Skepple, Karen Dilka, Dustin Brumbaugh, Scott Anderson, Alicia Hunter

Admin: Virginia Veeder

Guests: Karin Sehmman, Barbara McDermott

\* Prior notification of Absence

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1. Call to Order - Dr. Kim Naugle called the meeting to order at 3:33 PM. He then opened the floor for nominations for the 2013-14 committee chair. A motion was made for Dr, Naugle to continue as chair for this year, it was seconded and unanimously approved.
  2. Dr. Naugle then asked for agreement that the committee will continue to review any non-COE items first as done in the past. It was approved; this will continue to be the order for agenda items at meetings this year.
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### College of Arts and Sciences

#### Department of Chemistry

#### **APPROVED**

*Course Revision*

CHE100

Spring 2014

This was discussed with motion to approve. The motion carried, was seconded and the course revision was approved.

### College of Education

#### **APPROVED**

*Program Revision*

Admission to Professional Education

Fall 2014

This was discussed with motion to approve. The motion carried, was seconded and the program revision was approved.

#### **APPROVED**

*Program Revision*

Praxis Disclaimer

Immediately

Dr. Margaret Moore discussed and moved to approve. The motion carried, was seconded and the program revision was approved.

Department of American Sign Language

**APPROVED**

*Program Revision* American Sign Language (ASL) Studies (Minor) Fall 2014

This was discussed with motion to approve. The motion carried, was seconded and the program revision was approved.

Department of Curriculum & Instruction

**APPROVED**

*Course Revision* EDF203 Fall 2014

**APPROVED (With modifications)**

*Course Revision* EDF319 Fall 2014

**APPROVED (With modifications)**

*Course Revision* EDF319W Fall 2014

**APPROVED (With modifications)**

*Course Revision* LIB301 Fall 2014

**APPROVED (With modifications)**

*Course Revision* LIB301S Fall 2014

**APPROVED**

*Program Revision* B.S. Elementary Education (P-5) Teaching Fall 2014

**APPROVED**

*Program Revision* MAED Secondary Education Fall 2014

**APPROVED**

*Course Revision* LIB805 Fall 2014

**APPROVED**

*New Endorsement* Endorsement: Elementary Mathematics Specialist (P-5) Summer 2014

**APPROVED (With modifications)**

*New Course* EMS878 Fall 2014

The first 5 course revisions were discussed by Dr. Dorie Combs prior to approval of each one. She then discussed the remainder of their C&I items. There was a motion, second and approval for each one.

Department of Educational Leadership & Policy Studies

**APPROVED (With corrections)**

*Course Revision* EAD859 Fall 2014

**APPROVED (With corrections)**

*Course Revision* EAD879 Fall 2014

These items were discussed and approved with changes. The syllabi were both wrong and will be corrected so they can be submitted for the next Graduate Council meeting.

Department of Special Education

**APPROVED** (*Pending Revisions*)

*Hybrid Course* CDS571W Fall 2014

*(Added after meeting on October 22, 2013)*

*Course Revision* CDS571 Fall 2014

Dr. Deborah Haydon discussed CDS571W. There was a motion and second for this item, however it was decided that CDS571 needs to accompany CDS571W through the process, so CDS571W was approved with revisions. The addition of Line 2, CDS571, required an electronic vote from the College Curriculum Coordinating Committee. This vote was conducted on October 23-25 with unanimous approval.

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Discussion / Informational Items

Good of the Order

- Dr. Dorie Combs made a motion to adjourn, Dr. Faye Deters seconded.
  - Meeting dismissed at 4:37 PM.

Approved on 12-10- 2013  
Submitted by: Virginia Veeder



**EASTERN KENTUCKY UNIVERSITY**

*Serving Kentuckians Since 1906*

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**MEMORANDUM**

**TO:** Teacher Education Committee  
**FROM:** Dr. Kim Naugle  
Associate Dean  
**DATE:** November 22, 2013  
**SUBJECT:** TEC Agenda

Please consider the following agenda items for the College of Education at the next Teacher Education Committee meeting on Tuesday, November 26, 2013:

College of Arts and Sciences

**Dept: Geography & Geology**

**Chair: Melissa Dieckmann**

Course Revision	GLY102	Page 3
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**Dept: Physics & Astronomy**

**Chair: Anthony Blose**

Course Dropped	AST330	Page 6
New Course	AST335	Page 7
Program Revision	Bachelor of Science (B.S.) Physics/Teaching	Page 19





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karin.sehmann@eku.edu

**MEMORANDUM**

**TO:** Teacher Education Committee

**FROM:** Dr. Karin Sehmann  
Interim Associate Dean  
College of Arts and Sciences

**DATE:** November 19, 2013

**SUBJECT:** Curriculum Proposals for 11-26-13 TEC Meeting

The College of Arts and Sciences submits the attached agenda items for consideration at the November 26, 2013 meeting of the Teacher Education Committee.

Encls

## Teacher Education Committee Agenda Items: 11-26-2013

Dept	Type	Course Prefix	Course Number	Course Title	Action Requested	Page
1.	GLY	Course Revision	GLY 102	Earth Science for Teachers	Remove “credit not awarded” language	3
2.	PHAS	Course Dropped	AST 330		Drop course. This course is being replaced by AST 335	6
3.	PHAS	New Course	AST 335	Stars, Galaxies & Cosmology	Create a new upper-division astronomy course with a lab component	7
4.	PHAS	Program Revision		Physics/Teaching B.S.	Revise program to drop AST 330 and add AST 335	19

**Curriculum Change Form**  
**(Present only one proposed curriculum change per form)**  
**(Complete only the section(s) applicable.)**

**Part I**

<input type="checkbox"/> (Check one) New Course (Parts II, IV)	Department Name	Geography and Geology	
<input checked="" type="checkbox"/> Course Revision (Parts II, IV)	College	Arts and Sciences	
<input type="checkbox"/> Hybrid Course ("S," "W")	*Course Prefix & Number	GLY 102	
<input type="checkbox"/> New Minor (Part III)	*Course Title	Earth Science for Teachers	
<input type="checkbox"/> Program Suspension (Part III)	*Program Title		
<input type="checkbox"/> Program Revision (Part III)	*Provide only the information relevant to the proposal.	If Certificate, indicate Long-Term (University) or Short-Term (Departmental)	

	<u>Date</u>		<u>Date</u>
Proposal Approved by: Departmental Committee	9-27-13	Council on Academic Affairs	
College Curriculum Committee	11-18-13	Faculty Senate**	NA
General Education Committee*	11-14-13	Board of Regents**	NA
Teacher Education Committee*		EFFECTIVE ACADEMIC TERM***	
Graduate Council*	NA		

\*If Applicable (Type NA if not applicable.)  
\*\*Approval needed for program revisions or suspensions.  
\*\*\*To be added by the Registrar's Office after all approval is received.

**Completion of A, B, and C is required: (Please be specific, but concise.)**

**A. 1. Specific action requested:** (Example: Increase the number of credit hours for ABC 100 from 1 to 2.)  
To remove the language "credit will not be awarded for both GLY 102 and GLY 302."

**A. 2. Proposed Effective Academic Term:** (Example: Fall 2012)  
Fall 2014

**A. 3. Effective date of suspended programs for currently enrolled students:** (if applicable)

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**B. The justification for this action:**  
GLY 302 is being revised to add general education prerequisites, including GLY 102. Therefore, the "credit not awarded" statement is no longer relevant and should be removed.

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**C. The projected cost (or savings) of this proposal is as follows:**

**Personnel Impact: None.**

**Operating Expenses Impact: None.**

**Equipment/Physical Facility Needs: None.**

**Library Resources: None.**



**Part II. Recording Data for New, Revised, or Dropped Course**

(For a **new required course**, complete a separate request for the appropriate program revisions.)

1. For a new course, provide the catalog text.
2. For a revised course, provide the current catalog text with the proposed text using ~~strikethrough~~ for deletions and underlines for additions.
3. For a dropped course, provide the current catalog text.

New or Revised\* Catalog Text

(\*Use ~~strikethrough~~ for deletions and underlines for additions. Also include Crs. Prefix, No., and description, limited to 35 words.)

**GLY 102 Earth Science for Teachers. (3) I, II.** Prerequisite: pre-teaching and teaching elementary and middle school education majors only or departmental approval. This inquiry-based course for teachers integrates content, pedagogy and technology to explore Earth as an integrated set of systems and as part of the Solar System. ~~Credit will not be awarded for both GLY 102 and GLY 302.~~ 1 Lec/4 Lab. Gen. Ed. E-4.

**Part III. Recording Data for Revised or Suspended Program**

1. For a revised program, provide the current program requirements using ~~strikethrough~~ for deletions and underlines for additions.
2. For a suspended program, provide the current program requirements as shown in catalog. List any options and/or minors affected by the program's suspension.

Revised\* Program Text

(\*Use ~~strikethrough~~ for deletions and underlines for additions.)

**Part IV. Recording Data for New or Revised Course** (Record only **new or changed** course information.)

Course prefix (3 letters)	Course Number (3 Digits)	Effective Academic Term (Example: Fall 2012)	College/Division:	Dept. (4 letters)*
GLY	102	Fall 2014	AS <input checked="" type="checkbox"/> HS _____ BT _____ JS _____ ED _____ UP _____	GEOL
Credit Hrs.	Weekly Contact Hrs.		Repeatable Maximum No. of Hrs. _____	
	Lecture _____ Laboratory _____ Other _____		Cip Code (first two digits only)	
Schedule Type* (List all applicable)	Work Load (for each schedule type)	Grading Mode*	Class Restriction, if any: (undergraduate only)	
			FR _____ JR _____ SO _____ SR _____	
		Grading Information: Course is eligible for IP (in-progress grading) for: <u>Check all applicable</u>		
		Thesis _____		
		Internship _____		
		Independent Study _____		
		Practicum _____		

**CoRequisites and Prerequisites** **\*\*See definitions on following page\*\***

**Co-Requisite(s):** (List only co-requisites. See below for prerequisites and combinations.)

Course Prefix and No.	
Course Prefix and No.	

**Prerequisite(s):** (List prerequisites only. List combinations below. Use “and” and “or” literally.) (Specific minimum grade requirements should be placed in ( ) following courses. Default grade is D-.)

Course Prefix and No.	
Course Prefix and No.	
Test Scores	
Minimum GPA (when a course grouping or student cumulative GPA is required)	

**Co-requisite(s) and/or Prerequisite(s) Combination** (Use “and” and “or” literally.) (Specific minimum grade requirements should be placed in ( ) following courses. Default grade is D-.)

Course Prefix and No.	
Test Scores	
Minimum GPA (when a course grouping or student cumulative GPA is required)	

**Equivalent Course(s):** (credit will not be awarded for both...; or formerly...)

Course Prefix and No.	GLY 302
Course Prefix and No.	
Course Prefix and No.	

Proposed General Education Element: Please mark (X) in the appropriate Element or Elements ( e.g. – 4B(3) X ).

Element 1 (9)	Element 2 (3)	Element 3 (6)	Element 4 (6)	Element 5 (6)	Element 6 (6)
1A (3)	2 (3)	3A (3)	4A (3)	5A (3)	6 (6)
1B (3)		3B (3)	4B (3)	5B (3)	
1C (3)		or 3A/B Integrated A&H(6)	or 4A/B Integrated Sciences(6)		

## Council on Academic Affairs Curriculum Change Form

### COURSE DROP

Department Name	Physics and Astronomy		
College	Arts and Sciences		
Proposal Approved by:	<u>                    Date                    </u>		<u>                    Date                    </u>
Departmental Committee:	<u>10/30/2013</u>	Graduate Council*	<u>NA</u>
College Curriculum Committee:	<u>11/18/2013</u>	Council on Academic Affairs	<u>                    </u>
General Education Committee*:	<u>11-14-13</u>	Approved ___ Disapproved ___	
Teacher Education Committee*	<u>NA</u>	*If Applicable (Type NA if not applicable.)	

**Completion of A and B is required:**

<p><b>A. Effective Academic Year:</b> (Example: Fall 2010/11): Fall 2014</p>
<p><b>B. The justification for this action: (course no longer taught/comment if other)</b></p> <p>The change here is part of the program revision of the Department of Physics and Astronomy. The course dropped here will be replaced by a new course with lab component.</p>

**List all courses to be dropped**

Prefix	Number	Title	Comments:
AST	330	Stars, Black Holes: the Cosmos	AST 330 will be replaced by AST 335. AST 330 doesn't have lab component, therefore it no longer satisfies General Education requirement.

For Registrar Office Use Only:	Date: _____	Initial: _____	Office of the Registrar
Copy Sent to: Graduate Council			Version 1.3 10/21/09

**Curriculum Change Form**  
**(Present only one proposed curriculum change per form)**  
**(Complete only the section(s) applicable.)**

**Part I**

<input type="checkbox"/> (Check one)	Department Name	Physics and Astronomy	
<input checked="" type="checkbox"/> New Course (Parts II, IV)	College	Arts and Sciences	
<input type="checkbox"/> Course Revision (Parts II, IV)	*Course Prefix & Number	AST 335	
<input type="checkbox"/> Hybrid Course ("S," "W")	*Course Title	Stars, Galaxies & Cosmology	
<input type="checkbox"/> New Minor (Part III)	*Program Title		
<input type="checkbox"/> Program Suspension (Part III)			
<input type="checkbox"/> Program Revision (Part III)	*Provide only the information relevant to the proposal.	If Certificate, indicate Long-Term (University) or Short-Term (Departmental)	

Proposal Approved by:	<u>Date</u>		<u>Date</u>
Departmental Committee	10/30/2013	Council on Academic Affairs	
College Curriculum Committee	11/18/2013	Faculty Senate**	NA
General Education Committee*	11/14/2013	Board of Regents**	NA
Teacher Education Committee*		EFFECTIVE ACADEMIC TERM***	
Graduate Council*	NA		

\*If Applicable (Type NA if not applicable.)  
\*\*Approval needed for program revisions or suspensions.  
\*\*\*To be added by the Registrar's Office after all approval is received.

**Completion of A, B, and C is required: (Please be specific, but concise.)**

**A. 1. Specific action requested:** (Example: Increase the number of credit hours for ABC 100 from 1 to 2.)  
To create a new upper level astronomy course with a laboratory component.

**A. 2. Proposed Effective Academic Term:** (Example: Fall 2012)  
Fall 2014

**A. 3. Effective date of suspended programs for currently enrolled students:** (if applicable)

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**B. The justification for this action:**

PHAS wants to create a new upper level astronomy course, AST 335, with a laboratory component. The goal is to use this course to replace the existing AST 330, to meet the requirements of Element 4 in the General Education program. The action will change the current lecture-based course (AST 330) into a student-centered integrated lecture/laboratory course. The department has converted all introductory physics courses (PHY 101/102, 131/132, 201/202) from separate laboratory courses into an integrated lecture/laboratory format and observed great success. We want to bring this success to the astronomy course taken by non-science majors, and enhance their learning experience in this course.

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**C. The projected cost (or savings) of this proposal is as follows:**

**Personnel Impact:** None.

**Operating Expenses Impact:** None.

**Equipment/Physical Facility Needs:** None.

**Library Resources:** None.

**Part II. Recording Data for New, Revised, or Dropped Course**

(For a **new required course**, complete a separate request for the appropriate program revisions.)

1. For a new course, provide the catalog text.
2. For a revised course, provide the current catalog text with the proposed text using ~~striethrough~~ for deletions and underlines for additions.
3. For a dropped course, provide the current catalog text.

New or Revised\* Catalog Text

(\*Use ~~striethrough~~ for deletions and underlines for additions. Also include Crs. Prefix, No., and description, limited to 35 words.)

**AST 335 Stars, Galaxies & Cosmology.** (3) A. Prerequisite: MAT 105 or higher or ACT mathematics subscore of 20 or higher or departmental approval; and ENG 102 or ENG 105(B) or HON 102. A survey course describing the origin and evolution of stars, including black holes, galaxies, and the Universe. We will demonstrate how observations, models and quantitative analysis with graphs lead to the current state of knowledge. Credit will not be awarded for both AST 335 and AST 330. 4 Lec/Lab. Gen. Ed. E-4.

**Part III. Recording Data for Revised or Suspended Program**

1. For a revised program, provide the current program requirements using ~~striethrough~~ for deletions and underlines for additions.
2. For a suspended program, provide the current program requirements as shown in catalog. List any options and/or minors affected by the program's suspension.

Revised\* Program Text

(\*Use ~~striethrough~~ for deletions and underlines for additions.)

**Part IV. Recording Data for New or Revised Course** (Record only **new** or **changed** course information.)

Course prefix (3 letters)	Course Number (3 Digits)	Effective Academic Term (Example: Fall 2012)	College/Division:	Dept. (4 letters)*
AST	335	Spring 2014	AS <input checked="" type="checkbox"/> HS _____ BT _____ JS _____ ED _____ UP _____	PHAS
Credit Hrs.	Weekly Contact Hrs.		Repeatable Maximum No. of Hrs. _____	
3	Lecture <u>4</u> Laboratory _____ Other _____	Cip Code (first two digits only) 40		
	<u>Lec/</u> <u>Lab</u>			
Schedule Type* (List all applicable)	Work Load (for each schedule type)	Grading Mode*	Class Restriction, if any: (undergraduate only)	
L	4	N	FR _____ JR _____	
			SO _____ SR _____	
		Grading Information: Course is eligible for IP (in-progress grading) for: <u>Check all applicable</u>		
		Thesis _____		
		Internship _____		
		Independent Study _____		
		Practicum _____		

**CoRequisites and Prerequisites** **\*\*See definitions on following page\*\***

**Co-Requisite(s):** (List only co-requisites. See below for prerequisites and combinations.)

Course Prefix and No. \_\_\_\_\_

Course Prefix and No. \_\_\_\_\_

**Prerequisite(s):** (List prerequisites only. List combinations below. Use “and” and “or” literally.) (Specific minimum grade requirements should be placed in ( ) following courses. Default grade is D-.)

Course Prefix and No. MAT 105 or higher or ACT mathematics subscore of 20 or higher or departmental approval; and

Course Prefix and No. ENG 102 or ENG 105(B) or HON 102.

Test Scores \_\_\_\_\_

Minimum GPA (when a course grouping or student cumulative GPA is required) \_\_\_\_\_

**Co-requisite(s) and/or Prerequisite(s) Combination** (Use “and” and “or” literally.) (Specific minimum grade requirements should be placed in ( ) following courses. Default grade is D-.)

Course Prefix and No. \_\_\_\_\_

Test Scores \_\_\_\_\_

Minimum GPA (when a course grouping or student cumulative GPA is required) \_\_\_\_\_

**Equivalent Course(s):** (credit will not be awarded for both...; or formerly...)

Course Prefix and No. AST 330

Course Prefix and No. \_\_\_\_\_

Course Prefix and No. \_\_\_\_\_

Proposed General Education Element: Please mark (X) in the appropriate Element or Elements ( e.g. – 4B(3) X ).

Element 1 (9)	Element 2 (3)	Element 3 (6)	Element 4 (6)	Element 5 (6)	Element 6 (6)
1A (3)	2 (3)	3A (3)	4 (3) X	5A (3)	6 (6)
1B (3)		3B (3)	4B (3)	5B (3)	
1C (3)		or 3A/B Integrated A&H(6)	or 4A/B Integrated Sciences(6)		

**Astronomy 335: Stars, Galaxies & Cosmology**  
**Spring 2014, CRN: \*\*\*\*, 3 Credit Hours**

**Instructor:** Dr. Marco Ciocca **Office:** NSB 3162 **Phone:** 622-6172 **Email:** marco.ciocca@eku.edu

**Course Time:** T-TH 2:00-4:00 PM **Course Location:** NSB 3121

**Office Hours:** MWF 9:00 -10:00, and by appointment

**Textbooks:**

1. The Cosmic Perspective, by Bennet et al., Addison-Wesley, 2010 7<sup>th</sup> ed.
2. Lecture-tutorials for Introductory Astronomy, 2nd edition, by Prather, Slater, Adams, and Brissenden. Addison-Wesley, 2008.
3. Laboratory Activities, Black Board Website

**Software: Starry Night College**

The Department of Physics and Astronomy has purchase a site license for this software. We will use it to illustrate key points of the material during the semester and to perform activities to introduce and strengthen the understanding of topics. This software is available to students on 20 notebook computers accessible in the classroom.

**Course description: AST 335 Stars, Galaxies & Cosmology.** (3) A. Prerequisite: MAT 105 or higher or ACT mathematics subscore of 20 or higher or departmental approval; and ENG 102 or ENG 105(B) or HON 102. An survey course describing the origin and evolution of the stars, including black holes, galaxies and the Universe. We will demonstrate how observations, models and quantitative analysis with graphs lead to the current state of knowledge. Gen. Ed. E-4.

**Last Date to Drop the Course/Important Dates:** Deadlines for add/drop, and refunds can be found at <http://colonelscompass.eku.edu/>.

**General Education Goals:**

AST 335 is a general education course that is designed to meet the following general education goals:

1. Use appropriate methods of critical thinking and quantitative reasoning to examine issues and to identify solutions.
2. Analyze the fundamental natural processes of the world and the interactions of humans and their environment.
3. Distinguish the methods that underlie the search for knowledge in the arts, humanities, natural sciences, history, and social and behavioral sciences.
4. Integrate knowledge that will deepen their understanding of, and will inform their own choices about, issues of personal and public importance.

This course will introduce students to the terminology and the fundamental concepts and processes of basic astronomy. Critical thinking skills are essential in this course in using models and graphs to draw conclusions about astronomical observations.

Finally, students will gain an appreciation of the many ways in which an understanding of basic astronomy and scientific thinking can aid them in decision making in their everyday lives and in thoughtfully observing their surroundings.

### **Student Learning Outcomes:**

Upon completion of this course students will be able to:

1. describe the structure and patterns of the stars, galaxies and the universe as a whole.
2. describe basic astronomical observations and how those observations are made.
3. recognize basic laws of physics that are crucial to understanding astronomical behavior including Newton's Law of Universal Gravitation, Einstein's General Relativity, and the nature of light.
4. apply physical laws and astronomical models to specific cases to make informed predictions about the behavior of these astronomical systems.
5. demonstrate an understanding of the scientific method.
6. integrate the physical laws and the astronomical observations to form scientific theories about the nature of stars and galaxies.

**Blackboard:** Course announcements, homework assignments, Lab activities etc. will be posted on the course web page in ECU Blackboard. You are responsible for checking Blackboard and your ECU e-mail often for information updates. To access Blackboard, go to <http://learn.ecu.edu/webapps/login> and login. The login instructions can be found on that page by clicking the link "Student Guide for ECU Blackboard."

**Tests:** There will be three exams plus a comprehensive final exam. The following schedule is tentative . We will revisit this as the semester progresses

Test 1 will be given Tuesday, February 11, 2014.

Test 2 will be given Tuesday, March 18, 2013.

Test 3 will be given Tuesday, April 15, 2014.

**Our Final is in NSB 3121 on Thursday, May 8, 2014, 1:00 - 3:00 pm**

### **A Note of Special Interest:**

This is a new kind of Astronomy course. The design follows activity based instructional methodology pioneered by Pricilla Laws, et al. in Physics courses. We will not separate lecture and laboratory sections, and lab activities will be performed in small groups in the class, with inquiry-style activities. Many traditional approaches such as homework, examinations, and lectures will be retained. Please note, however, that formal lecture will not always be the primary instructional method used in this class. Some concepts will be introduced through the lab activities and reinforced through in-class discussions and homework.

You must download the activities to be performed from Black Board and print them before coming to class. These activities will be assigned regularly and sometimes a summary of the completed activity will need to be turned in. I will let you know when a summary is due and when.

**Evaluation:** Your final grade will be based on the following items and will be weighted as follow:

Attendance/Participation:	10%
Homework	10%
Quizzes + Activity Summary:	15%
Tests:	45%
<u>Final Exam (comprehensive)</u>	<u>20%</u>



Total:

100%

**Letter grades will be awarded as follows:**

Grade Range	
90-100	A
80-89	B
70-79	C
60-69	D
Below 60	F

The instructor reserves the right of modifying this scale, but only to help the students.

**Attendance:** The Department of Physics and Astronomy has a formal policy regarding attendance for class. Missing more than 6 classes during a semester will result in a failure in this course. In addition, your absence will adversely affect your performance in the homework, tests, lab activities and final exam. Since this class requires participation and cooperation during laboratory investigations, absences will adversely affect your performance. Your work during class as well as your attendance will be assessed daily.

**Activity Summaries:** At the end of some investigation an Activity Summary will be written and submitted. These summaries will be individual, even though the activities are group activities. Guidelines on how to write an activity summary are posted on Black Board.

**Tests:** Understanding and solving the homework problems and quiz questions as well as participating in lecture sessions should help prepare you for these exams. The format and time of the test will be announced by the instructor in the class.

**Final Exam:** This is a two hours, closed-book, and comprehensive exam. The format and time of the test will be announced by the instructor in the class and on Blackboard. A missed test will be counted as a zero and then will be replaced by your score on the final. No make-up tests or exam will be allowed except due to illness, serious family emergency, special curricular requirements, legal reasons, or participation of a university event. You must give me advance notice and present a note from the appropriate official (*e.g.* doctor). Since the final exam will be comprehensive, you will have the option of having your final exam grade replace your lowest test grade. Make-up exams will not be given. If you miss a test with a valid excuse, then the final exam will replace the missed test. If you miss an exam with no valid excuse then you will retain a grade of zero for that exam. It is your responsibility to inform me of your absence from a test with the valid excuse. You must contact me before the test is given unless there is some emergency situation that prevents you from using a phone or sending an e-mail. Your final letter grade will be determined by the following:

**Clicker:** To participate in the class, you will need an iClicker2, which is a response system that allows you to respond to questions posed during class. iClicker2 will be used every day in class, and you are responsible for bringing your iClicker2 daily. You can purchase iClicker2 at the University Bookstore or online. In order to receive credits from iClicker2, you will need to register your iClicker2 remote online within the first two weeks of class. You must also come to class at least once and voted on at least one question in order to complete this registration properly during the first two weeks. Once you have voted on a question in my class, go to <http://www.iclicker.com/registration>. Complete the fields with your first name, last name, EKU student ID, and remote ID. The remote ID

is the series of numbers and sometimes letters found on the bottom of the back of your iClicker2 remote.

**Mid-Term Grades:** Your mid-term grade will be calculated based on the tests, in-class exercises and homework completed before March 9 2014. **The last day to withdraw without a fee is February 9. The last day to withdraw from a course with instructor's written signature and incur a \$50 per credit hour fee (e.g. \$150 for a 3 credit hour course) is March 21.**

**General Classroom Policies:**

Cell phones must be turned off and put away during all classes and tests.

TEXTING: texting while class is in session will not be tolerated. It is disrespectful to me and to the students that are trying to pay attention. Please refrain from doing it. If I notice a student texting, the student will be asked to leave the classroom. Tests will be closed book, closed notes.

There will be several in-class group work assignments during the semester that are designed to help you understand the material. It will be to your advantage to actively participate in these assignments.

**Official E-mail:** An official ECU e-mail is established for each registered student, each faculty member, and each staff member. All university communications sent via e-mail will be sent to this ECU e-mail address.

**Academic Accommodations**

*A student with a “disability” may be an individual with a physical or mental impairment that substantially limits one or more major life activities such as learning, seeing or hearing. Additionally, pregnancy or a related medical condition that causes a similar substantial limitation may also be considered a disability under the ADA.*

If you are registered with the Office of Services for Individuals with Disabilities, please obtain your accommodation letters from the OSID and present them to the course instructor to discuss any academic accommodations you need. If you believe you need accommodation and are not registered with the OSID, please contact the office in the Whitlock Building Room 361 by email at [disserv@ecu.edu](mailto:disserv@ecu.edu) or by telephone at (859) 622-2933. Upon individual request, this syllabus can be made available in an alternative format.

**Academic Integrity Policy:** Students are advised that ECU's Academic Integrity policy will strictly be enforced in this course. The Academic Integrity policy is available at [www.academicintegrity.ecu.edu](http://www.academicintegrity.ecu.edu). Questions regarding the policy may be directed to the Office of Academic Integrity.

**Class outline (it may be changed as needed):**

<b>WEEK</b>	<b>Material</b>	<b>Notes</b>
<b>Jan. 14-16</b>	<b>Introduction, Chapter 5</b>	
<b>Jan. 21-23</b>	<b>Chapter 6</b>	
<b>Jan. 28-30</b>	<b>Chapter 14</b>	
<b>Feb. 4-6</b>	<b>Chapter 15</b>	
<b>Feb. 11-13</b>	<b>Chapter 16</b>	<b>Test 1</b>
<b>Feb. 18-20</b>	<b>Chapter S2</b>	
<b>Feb. 26-28</b>	<b>Chapter S3, 17</b>	
<b>Mar. 4-6</b>	<b>Chapter 17, 18</b>	
<b>Mar. 18-20</b>	<b>Chapter 18, 19</b>	<b>Test 2</b>
<b>Mar. 25-27</b>	<b>Chapter 19, 20</b>	
<b>Apr. 1-3</b>	<b>Chapter 20, 21</b>	
<b>Apr. 8-10</b>	<b>Chapter 21, 22</b>	
<b>Apr. 15-17</b>	<b>Chapter 22, 23</b>	<b>Test 3</b>
<b>Apr. 22 -24</b>	<b>Chapter 23, 24</b>	
<b>Apr. 29-May 1</b>	<b>Chapter 24 &amp; review</b>	

**Useful Dates**

January 20	Last day to drop/add without W
January 20	Martin Luther King Jr. Day, Holiday
March 10	Midterm Grades due
March 10-14	Spring Break
May 3	Last day of classes
<b>May 8</b>	<b>Final exam 1:00 - 3:00 NSB 3121</b>

**Activity List:**

- 1) Starry Night Tutorials: Introduction and Starry Night Tutorial F: the Sun.**
- 2) The Rotation of the Sun and the solar telescope.**
- 3) Starry Night Tutorial F2: Stellar Parallax.**
- 4) Lenses and Telescopes and Starry Night Tutorial H3 (Space Based Telescopes)**
- 5) The Spectroscope: Spectroscopy and the Doppler Effect.**
- 6) Starry Night Tutorial F3 and F4: Proper Motion of the Stars and the Inverse square relationship: Apparent Brightness and Luminosity.**
- 7) Starry Night Tutorial F5 and F6: The Sun Neighborhood and the Hertzsprung Russel Diagram.**
- 8) Hertzsprung Russell diagrams of Star Clusters**
- 9) Starry Night Tutorial F7 and F8: The death of Stars and Black Holes.**
- 10) Dying Stars and The birth of Elements**
- 11) Starry Night Tutorial G1 and G2: The Milky Way Galaxy and Galaxy Classification.**
- 12) Starry Night Tutorial G3 and G4: Redshift and the expansion of the Universe and Structure in the nearby Universe.**

**General Education Course Application**  
**GE-2012: ELEMENTS 1--6**  
Revised: Fall 2012

**Department:** Physics and Astronomy

**Course Prefix and Number:** AST 335

**Course Title:** Stars, Galaxies & Cosmology

**For which GE Element is the course designed?** Element 4

**Identify the General Education Goals addressed in this course:** (See below.)

The course will address General Education Goals: 2, 5, 7 & 8.

**Course Abstract**

1. Describe the course content.

*AST 330 is a course designed for non-science students to introduce them specifically to basic astronomical facts and theories and more generally to scientific observations and analysis. The course will focus on the nature of stars, black holes, galaxies and the universe as a whole as well as the scientific theories that allow insight into the formation of each of these. Emphasis is placed on how we make conclusions based on astronomical observations. The course also covers the basic physics needed to understand astronomy, including gravitation, the nature of light and the functioning of telescopes.*

*A new laboratory component has been added to the course, which will allow students to make observations with solar telescopes and spectroscopes, to use graphs to analyze data, investigate the properties of lenses and use sky simulation software to investigate astronomical phenomena.*

2. Describe the instructional methods (lecture, discussion, small groups, laboratory, or simulation), faculty qualifications, and course coordination.

*The course will be taught in an integrated lecture-laboratory format as our introductory physics courses are currently taught. Students will meet for 4 contact hours per week for a 3 credit hour course, consistent with other laboratory courses in the natural sciences.*

*Students will work in small groups to do laboratory activities and work problems. Lecture sessions will be integrated with the small group activities in the same room with the same instructor.*

*Faculty qualifications will be consistent with SACS guidelines. In general, instructors must have at least a Masters degree in Physics or a related field, or must have a Bachelors degree in Physics or related field and at least 18 graduate hours in Physics.*

*Course coordination will be done by Dr. Jessica Lair and Dr. Marco Ciocca.*

3. Describe any new resources needed to implement or to assess the course.

*No new resources will be needed.*

4. Describe the assessment process.

(a) What type of assessment instruments will be used to evaluate student learning?

*General Education Assessment will be done with four multiple-choice exams, relating to the four criteria on the General Education Natural Sciences rubric:*

- 1) Demonstrate an understanding of methods used to carry out scientific research*
- 2) Explaining the major concepts of the natural sciences*
- 3) Applying scientific principles to make reasonable and valid conclusions*
- 4) Integration of concepts across the course.*

(b) When will data be collected?

*Near the end of the semester every time the course is offered.*

(c) For how many students will assessments be scored?

*All students in the class will have their assessments scored.*

(d) Who will score the assessment instruments?

*The faculty member teaching the course or the person responsible for the assessment data for the course.*

(e) Who is the faculty person responsible for assessment data for this course?

*Dr. Garrett Yoder is the General Education assessment coordinator for the department.*

5. Provide at least one example of an assessment item (e.g., question on exam; portion of an assignment) that could be used to assess student learning on each of the criteria on the GE scoring rubric appropriate for this course.

1) Assessment item for: *Demonstrate an understanding of methods used to carry out scientific research*

What is one of the reasons that we can use star clusters as a tool to study stellar life cycles?

- (a) All stars in the cluster are the same size.
- (b) All stars in the cluster are at roughly the same distance.
- (c) All stars in the cluster are the same temperature.
- (d) All stars in the cluster are the same mass.

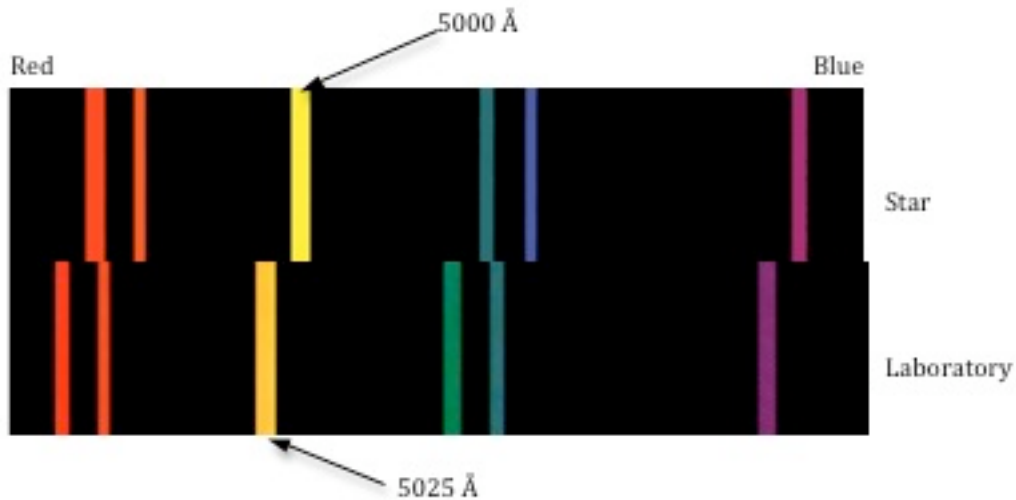
2) Assessment item for: *Explaining the major concepts of the natural sciences*

A star leaves the main sequence when

- a) the helium flash occurs.
- (b) the core starts fusing helium by the triple alpha process.
- (c) its core of hydrogen is depleted.
- (d) photo-disintegration starts to take place.

3) Assessment item for: *Applying scientific principles to make reasonable and valid conclusions*

If we see the following lines in the spectrum of a star and compare them to the lines in the laboratory we could determine that:



- (a) the star is moving away from us.
- (b) the star is moving toward us.
- (c) the star is not moving in relation to us.
- (d) the star is moving perpendicular to our line of sight.

4) Assessment item for *Integration of concepts across the course*.

Why are younger stars (more recently formed) in the disk of the Galaxy in general more metal rich than the older stars in the disk?

- (a) The initial starburst prevented the enrichment of the disk at first.
- (b) The older stars in the disk are the metal-poor globular cluster stars.
- (c) Metal-rich gas preferentially settled in the disk only recently.
- (d) Dust and gas in the disk has been enriched by many generations of stars.

**Curriculum Change Form**  
**(Present only one proposed curriculum change per form)**  
**(Complete only the section(s) applicable.)**

**Part I**

<input type="checkbox"/> (Check one) New Course (Parts II, IV)	Department Name	Physics and Astronomy
<input type="checkbox"/> Course Revision (Parts II, IV)	College	Arts and Sciences
<input type="checkbox"/> Hybrid Course ("S," "W")	*Course Prefix & Number	_____
<input type="checkbox"/> New Minor (Part III)	*Course Title	_____
<input type="checkbox"/> Program Suspension (Part III)	*Program Title	Bachelor of Science (B.S.) Physics/Teaching
<input checked="" type="checkbox"/> Program Revision (Part III)	*Provide only the information relevant to the proposal.	If Certificate, indicate Long-Term (University) or Short-Term (Departmental)

Proposal Approved by:	<u>Date</u>		<u>Date</u>
Departmental Committee	10/30/2013	Council on Academic Affairs	_____
College Curriculum Committee	11/18/2013	Faculty Senate**	_____
General Education Committee*	NA	Board of Regents**	_____
Teacher Education Committee*	_____	EFFECTIVE ACADEMIC TERM***	_____
Graduate Council*	NA		

\*If Applicable (Type NA if not applicable.)  
\*\*Approval needed for program revisions or suspensions.  
\*\*\*To be added by the Registrar's Office after all approval is received.

**Completion of A, B, and C is required: (Please be specific, but concise.)**

**A. 1. Specific action requested:** (Example: Increase the number of credit hours for ABC 100 from 1 to 2.)  
To revise the Physics/Teaching B.S. program to drop AST 330 and add AST 335.

**A. 2. Proposed Effective Academic Term:** (Example: Fall 2012)  
Fall 2014

**A. 3. Effective date of suspended programs for currently enrolled students:** (if applicable)

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**B. The justification for this action:**  
PHAS wants to create a new upper level astronomy course, AST 335, with a laboratory component. The goal is to use this course to replace the existing AST 330, to meet the requirements of Element 4 in the General Education program. A minor edit to the BIO 100/102 Gen Ed element is made. The action will keep the program description up to date.

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**C. The projected cost (or savings) of this proposal is as follows:**

**Personnel Impact: None**

**Operating Expenses Impact: None**

**Equipment/Physical Facility Needs: None**

**Library Resources: None**



**Part III. Recording Data for Revised or Suspended Program**

1. For a revised program, provide the current program requirements using ~~striethrough~~ for deletions and *underlines* for additions.
2. For a suspended program, provide the current program requirements as shown in catalog. List any options and/or minors affected by the program's suspension.

Revised\* Program Text  
(\*Use ~~striethrough~~ for deletions and underlines for additions.)

- see next page -

**Bachelor of Science (B.S.)  
Physics/Teaching  
CIP Code: 13.1329**

**Program Objectives**

Upon completion of this program the graduate will: 1) be able to apply mathematics to analyze problems in Physics; 2) be able to use fundamental physical results, such as conservation laws, to study physical systems; 3) be able to analyze important processes occurring in physical systems. Additionally, graduates of this program will: 1) be prepared to take and pass the Praxis exam in Physics; 2) be prepared to teach Physics in a secondary school.

**UNIVERSITY GRADUATION REQUIREMENTS**

- General Education .....36 hours
- Student Success Seminar (ASO 100; waived for transfers with 30+ hrs.).....1 hour
- Wellness.....3 hours
- Writing Intensive Course (Hrs. incorporated into Major/Supporting/Gen Ed/Free Electives category)
- Upper division courses (42 hrs. distributed throughout Major/Supporting/gen Ed/Free Electives categories)
- ACCT – Physics teaching majors will select one of the following: ESE 499, PHY 406, 470, 410, 349, 349 A-N, HON 420 with a program approved thesis topic, a program-approved leadership Experience, or a program-approved Study abroad experience. (Credit hours may be incorporated into Major or Supporting requirements.)
- Total hours University Graduation Requirements.....40 hours**

**MAJOR REQUIREMENTS**

**Core Courses** .....30 hours

AST 135, ~~330~~335; PHY 201(5) or 131(5), PHY 202(5) or 132(5); 14 hrs of physics courses numbered 300 and above.

**Required Minor** .....10-21 hours

A minor in mathematics, computer science, chemistry, earth science, biology, or other department-approved minor is required.

**Supporting Course Requirements** .....13 hours

CHE 111/111L(<sup>G</sup>Element 4), 112/112L; MAT 124\*(4) (<sup>G</sup>Element 2), 224(4); BIO 100(<sup>G</sup>Element 4A) or 102(<sup>G</sup>Element 4A); CSC 104 or CIS 212.

<sup>G</sup> = Course also satisfies a General Education element. Hours are included within the 36 hr. General Education requirement above.

**Professional Education Requirements**.....34 hours

EDF 103(1), 203, 319 or 319W, 413; SED 401 or 401S; ESE 561, 490, 499(12); and 3 hrs. of Applied Learning Field Experiences: EDF 349Q(0.5), 349R(0.5); EMS 349Q(0.5), 349R(0.5); and ESE 349(1).

**TOTAL HOURS TO COMPLETE DEGREE** .....**128-139 hours**

\*a preparatory course (MAT 109) in mathematics may be required before admission to MAT 124.

Candidates earning a degree that leads to teacher certification must take the PRAXIS Series (Professional assessments for Beginning teachers) and PLT (Principles of learning and teaching) exams as a requirement for graduation. Candidates are encouraged to review the schedule for PRAXIS and PLT registration deadlines prior to beginning the senior year (<http://www.kyepsb.net/assessment/index.asp> and [www.ets.org/praxis](http://www.ets.org/praxis)). Specialty exams are required for each certification area sought and it may take more than one test date to complete all requirements. Candidates should confer with their education advisor/counselor to determine the optimal time to take required exams.